

**Atlas Minerals**  
Division of Atlas Corporation  
**Big Indian Mines**  
LaSal, Utah 84530

File ACT/05/011  
ACT/015/013  
Route to Wayne  
Sim  
DWH

March 18, 1981

James W. Smith Jr.  
Division of Oil, Gas, and Mining  
1588 West North Temple  
Salt Lake City, Utah 84116

Dear Mr. Smith:

RECEIVED  
MAR 23 1981

The enclosed material contains my reply to the Division of Health's letter dated May 12, 1980.

With the installation of the treatment facility the pollutant level of the discharge water has been below the applicable limits except for suspended solids which are currently at twice the acceptable level. This is being remedied. I am now in the process of filing for an NPDES permit on this facility. How??

If I can provide you with more information on this please contact me.

Sincerely,

Richard A. Dye

Richard A. Dye  
Chief Engineer

RD/v1

**Atlas Minerals**  
Division of Atlas Corporation  
**Big Indian Mines**  
Moab, Utah  
84532

August 8, 1980

Mr. Steve McNeal  
Utah State Department of Health  
P.O. Box 2500  
Salt Lake City, Utah 84110

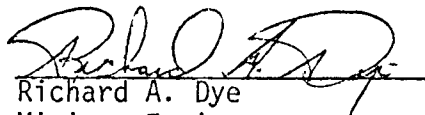
Dear Steve:

As of August 1, 1980 the Snow - Probe mine water treatment facility was operational. As I have previously mentioned the amount of Barium Chloride to be added has been calculated based upon literature on the subject, similar systems, and our own research. However, we maintain that additional testing and possible readjustment of the system may be required as conditions demand.

As per your instructions, beginning in September we shall submit monthly operating reports containing all pertinent data on the system.

Thank you for your continuing cooperation in this matter.

Sincerely,

  
Richard A. Dye  
Mining Engineer

RD/tw

**Atlas Minerals**  
Division of Atlas Corporation  
**Big Indian Mines**  
Moab, Utah  
84532

June 18, 1980

Mr. Steve McNeal  
Utah State Department of Health  
P.O. Box 2500  
Salt Lake City, Utah 84110

Dear Steve:

Enclosed is a general summary concerning the Snow - Probe mine water treatment system.

At our meeting on June 3, 1980 we agreed to have the treatment facility operational by July 31, 1980. We are having some trouble with parts availability but I feel that we can still meet this deadline.

At the meeting we indicated to you that it would require additional time beyond the completion date to bring the system into its optimum operation. It was also recognized that final effluent quality standards will be subject to review upon successful completion of the treatment system.

I hope that the enclosed summary will answer your questions concerning the immediate future of the Snow - Probe treatment system. If you have any further questions please contact me.

Sincerely,

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Richard A. Dye  
Mining Engineer

RD/tw

REVISED  
SNOW - PROBE MINE WATER TREATMENT FACILITY

Prepared by Atlas Minerals Engineering Department

June 18, 1980

R.A. Dye

The construction techniques and treatment design for the Snow - Probe water treatment system has been prepared by Atlas Minerals' Engineering staff. The construction and treatment design are based upon recommendations by outside consultants, literature on the subject and conversations with operators at Rio Algom and Union Carbide who have similar systems in operation.

### INTRODUCTION

Atlas Minerals' Snow - Probe mine water storage and treatment facility is located in Section 22, Township 21 S., Range 14E., S.L.B.M., approximately 15 miles West of Green River, Utah. (Fig. 1)

The treatment system is designed to store water removed from adjacent mining operations so that it can be treated, principally for solids settlement and radium removal. The treated water is then discharged into a natural drainage in the Green River desert. During the summer and winter months the effluent flows approximately two and five miles respectively before evaporation and absorption ends the stream. At no time, based upon our experience, does this effluent stream directly enter or become a part of any tributary to any stream or river system.

where does the  
discharged H<sub>2</sub>O end up?  
Does it evaporate  
or is it absorbed?  
DWH

### Pond Construction

The Ponding facility consists of three ponds constructed according to the methods outlined in the construction permit application. The inlet pond is designed with a capacity of 500,000 gallons. This pond serves to allow the influent a sufficient length of time for suspended material to settle and the water to stabilize.

Water is removed from the first pond through the treatment facility and into the second pond. (Drw. No. SN-T-150-d) At this point the treated water is again allowed to settle. The third pond in the system is for enhanced settling or may be used if a coagulant is required.

### Treatment System

The Snow - Probe treatment method utilizes the addition of Barium Chloride to the mine water. (Drw. No. SN-T-152-d) This technology has proven reliable up to a practical limit in numerous systems in which the removal of radium is required.

Initial planning specifies the addition of 10 mg/L of  $\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$ . This figure is based upon others experiences with similar water qualities. The treatment system design allows excellent flexibility and range to meet any foreseeable treatment requirements.

In the system's design every effort has been made to provide back up systems including visual and audio warning devices for component failure and a complete stock of replacement parts are made available should the system require it.

At the present time the use of a coagulant is not considered necessary. However, the design is such that a system could be added if it becomes apparent that one is needed. (repaired letter to town 3/18/91)